CENTER FOR COMPLIANT MECHANISMS

CENTER

The Center for Compliant Mechanisms (CCM) designs methods to accelerate and streamline the development and commercialization process of compliant mechanisms so that they may be quickly licensed to existing or new companies. The use of innovative and patented compliant mechanisms gives companies a clear competitive advantage and will provide unique and valuable products for new companies. It is anticipated that as the design technologies mature, a new Utah company could be formed to provide contract mechanical design services to a wide variety of clients. The potential market applications and opportunities are immense.

TECHNOLOGY

Compliant mechanism technology produces mechanical parts that are simpler, less costly and more wear resistant than conventional designs. A classic example is the flip top on a shampoo bottle. The part is bistable (exists in one of two states, open or closed), is injection molded in a one-step process, does not fail after millions of operations, and costs a fraction of the price of older devices. The CCM center focuses on defining the design methodologies for such mechanisms to reduce development time and assure rapid commercialization. The center has designed and licensed a number of such mechanisms and will continue to develop and license products. Designs completed to date include devices for power transmission, bistable mechanisms, parallel motion mechanisms, constant force mechanisms, and microelectromechanical systems (MEMS).

ACCOMPLISHMENTS

The center has licensed two products during the year: a compliant parallel brake mechanism licensed to Tektro, a Taiwanese company, and an ortho-planar spring license granted to Flowserve, a Utah company. In addition, design work has been completed on a compliant bicycle derailleur, a silicon die transport tool, a centrifugal clutch, and an over-running clutch. Design work is underway on a constant-force robot end-effector, a bistable switch application for a Utah irrigation products company, and a series of MEMS devices. The MEMS research has advanced much more rapidly than anticipated and is close to producing commercializable products. Six provisional patents have been filed during the fiscal year.

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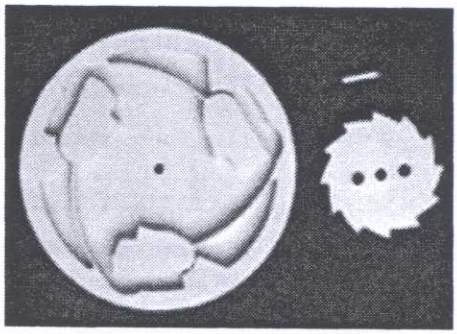
Can You Imagine...

A method for redesigning any complex mechanical part to significantly reduce the numbers of parts, simplify the manufacturing process, reduce costs and end up with a more reliable and wear resistant device?

THE CENTER DEVELOPS/DESIGNS METHODS TO ACCELERATE AND STREAMLINE THE DEVELOPMENT AND COMMERCIALIZATION PROCESS OF COMPLIANT MECHANISMS



A compliant overrunning clutch, which illustrates the part-count reduction that can be achieved using compliant mechanisms.